

Amendments to the Specification:

Please amend the specification of the present application as follows. Amendments are shown below in **boldface** typeface to aid in understanding the changes being made.

Please replace paragraph [0005] of the present application with the following rewritten paragraph:

[0005] In U.S. Pat. No. 3,457,113 and U.S. Pat. No. 3,706,601 it is known that the binder can be introduced from an aqueous or organic suspension. In this case further heat treatment is required to remove surfactants (wetting agents) used in the PTFE suspension. To remove the wetting agents from the electrode a temperature of over 200° **[[C.]]**

Celsius is used. At temperatures of more than 300° **[[C.]]** **Celsius** a nitrogen atmosphere is required to prevent oxidation. These temperature steps severely hamper a continuous production line of electrode manufacturing. The electrodes must be heated at a rate <6° /min to prevent cracking of the electrode structure. In addition, the required temperature must be maintained for at least 1 hour to be certain that all the surfactants have evaporated. Therefore, the best method for heat treatment is by inserting a batch in a closed furnace. A furnace connected to a continuous production line will be very expensive and a rate determining step for the total production capacity of the line.

Please replace paragraph [0009] of the present application with the following rewritten paragraph:

[0009] In U.S. Pat. No. 5,312,701 an alternative production method is shown. The active layer, where the reaction takes place, and the gas diffusion layer of the electrode are prepared by a filtration method in a single pass **[[PATH??]]** process. It is claimed that this is a quicker and more cost-effective method. However, the electrodes have to be heated to 270° **[[C.]]** **Celsius** under pressure in a sintering procedure after the electrodes have been produced. This is a time consuming and slow step that is not well suited for continuous production.

Please replace paragraph [0012] of the present application with the following rewritten paragraph:

[0012] In one embodiment the method includes using a ball mill for mixing in the agglomeration step. The powders are then mixed for more than 30 minutes. In a further embodiment mixing in the agglomeration step may be performed using a blender with rotating blades, which rotate at a speed at 1000-3000 rpm. The powders are heated prior to agglomeration to a temperature in the range of 50-200° [[C]] Celsius. The agglomeration time in this embodiment is at least 1 minute. It is also possible to [[per-form]] perform agglomeration using a high-speed mill with blades that rotate at more than 10000 rpm. The agglomeration time in this embodiment is from 10 seconds to 5 minutes.

Please replace paragraph [0015] of the present application with the following rewritten paragraph:

[0015] In a further calendering step said electrode may be calendered with a further gas diffusion layer. The layers in the electrode may be combined by calendering or pressing. The electrode may be further dried at a temperature less than 40° [[C]] Celsius.

Please replace paragraph [0017] of the present application with the following rewritten paragraph:

[0017] In a further aspect the invention provides an electrode manufactured by the [[met-hod]] method described above.

Please replace paragraph [0025] of the present application with the following rewritten paragraph:

[0025] FIG. 2 shows oxygen reduction from air at 20° [[C.]] Celsius of electrodes with and without a noble metal catalyst;

Please replace paragraph [0026] of the present application with the following rewritten paragraph:

[0026] FIG. 3 shows a graph of the lifetime of an electrode undergoing oxygen reduction from air at 70° **[[C.]] Celsius** at 100 mA/cm² in a galvanostatic experiment at 0.1 A/cm²; and

Please replace paragraph [0032] of the present application with the following rewritten paragraph:

[0032] 2. Use of a commercially available blender with rotating blades, which rotate at a speed at 1000-3000 rpm. Prior to mixing, the powders are heated to a temperature in the range of 50-200° **[[C]] Celsius**.

Please replace paragraph [0034] of the present application with the following rewritten paragraph:

[0034] FIG. 1 part (II) shows the unit for paste formation from the agglomerate. To **[[over-come]] overcome** the severe problems of continuous production from the dry agglomerate, an organic solvent is added after the agglomeration step. The agglomerate is then transformed into a paste, which can easily be made into a thin layer. By adding the solvent after the agglomeration step, wetting agents do not have to be used.

Please replace paragraph [0035] of the present application with the following rewritten paragraph:

[0035] The paste is formed by slowly adding the solvent to the agglomerate with stirring. In this manner the solvent is baked **and** incorporated into the agglomerate and a homogeneous paste is formed. In some cases, especially in the case of a low PTFE content (<10 wt %) or with materials that agglomerate poorly, it is important to plastify the paste further, in such cases the solvent and/or the paste can be heated following the incorporation process.

Please replace paragraph [0045] of the present application with the following rewritten paragraph:

[0045] FIG. 3 shows the lifetime study of a gas diffusion electrode with graphite for oxygen reduction. At a current of 100 mA/cm² and a temperature of 70° [[C.]] Celsius the potential is stable for more than 1400 hours. As shown in the figure, long lifetime is obtained with the use of graphite. This is related to the degradation mechanism of the electrodes. Degradation of gas diffusion electrodes for oxygen reduction is caused by radicals formed in the reaction. These radicals attack the carbon, increasing the hydrophilicity of the electrode and causing flooding of the structure. With graphite, the attacks by radicals are less severe as graphite is more stable than active carbon. High surface area is necessary to create the pore structure for gas and liquid transport. Therefore, the use of high surface area graphite is optimal. The same effect may however also be obtained with some types of active carbon that are especially stable, for instance carbons with a high number of basal planes in the surface structure.

Please replace paragraph [0049] of the present application with the following rewritten paragraph:

[0049] Agglomeration is performed in the same manner for the active- and the gas diffusion layer. Adding PTFE to the carbon powder mix produces the agglomerate. The agglomeration was performed in a high-speed mill ([[20 000]] 20,000 rpm) for 1 min. The [[ad-vantage]] advantage of the high-speed mill is the rapid agglomeration from dry powders. With no surfactants (wetting agents) the hydrophobicity of the agglomerate is high.

Please replace paragraph [0051] of the present application with the following rewritten paragraph:

[0051] The paste can be extruded and calendered into a thin sheet (<1 mm thick). A Nimesh Ni mesh current collector was calendered into the thin electrode sheet. Also, other materials can be used for the current collector e.g. Ag, silver coated copper, nickel

coated copper or carbon composite materials. Alternatively, the current collector can be calendered into the gas diffusion layer. The calendering procedure is performed in the same manner for the gas diffusion layer and the active layer.

Please replace paragraph [0052] of the present application with the following rewritten paragraph:

[0052] To form the gas diffusion electrode the active- and the gas diffusion layer must be combined. The current collector was calendered into the gas diffusion layer prior to combining it with the active layer. The two layers were combined by calendering them together. After the active layer was rolled together with the gas diffusion layer, the electrode was dried at < 40° **[[C.]] Celsius** to evaporate the solvent. The total **[[thickness]] thickness** of the two-layer electrode should be (400-1000 μ m).